CLAIMS:

1. A partitioned block frequency domain adaptive filter for filtering an input signal in dependence on a control signal, the adaptive filter comprising a plurality of parallel arranged filter partitions, each filter partition being arranged for modeling a part of an impulse response of the adaptive filter, each filter partition having update means for updating filter coefficients of that filter partition by circular convoluting a signal representative of the input signal and a signal representative of the control signal, the update means comprising constraint means for intermittently constraining the filter coefficients by eliminating circular wrap-around artifacts of the circular convolution, characterized in that the update means further comprise selection means for selecting and removing at least part of the circular wrap-around artifacts, the selection means comprising an approximation of a rectangular constraint window.

2. The partitioned block frequency domain adaptive filter according to Claim 1, characterized in that the selection means are arranged for selecting the at least part of the circular wrap-around artifacts when the filter coefficients are not constrained by the constraint means.

3. The partitioned block frequency domain adaptive filter according to Claim 1 or 2, characterized in that time domain values of the approximation are larger than or equal to zero.

4. The partitioned block frequency domain adaptive filter according to any one of the Claims 1 to 3, characterized in that the approximation in time domain has substantially high slopes near the positions which correspond to the positions of the transitions in a rectangular constraint window.

5. The partitioned block frequency domain adaptive filter according to any one of Claims 1 to 4, characterized in that frequency domain values of the approximation each comprise a real value and complex conjugate imaginary values, whereby at least part of the

imaginary values form a row of numbers, the numbers being obtainable from one another by multiplication.

6. The partitioned block frequency domain adaptive filter according to Claim 5, characterized in that the frequency domain values of the approximation are defined as:

$$(\underline{G}^{2N})_i = \begin{cases} 2N \cdot a & \text{for } i = 0 \\ 0 & \text{for } 0 < i < 2N, i \text{ even} \\ -\frac{2N \cdot a}{2}\left(m^{-\left(\frac{i-1}{2}\right)} - m^{-\left(\frac{2N-1-i}{2}\right)}\right) j & \text{for } 0 \leq i < 2N, i \text{ odd} \end{cases}$$

with i being an index number, m being a multiplication factor, a being a mean value.

7. The partitioned block frequency domain adaptive filter according to Claim 6, characterized in that m is substantially equal to 2.166.

8. An acoustic echo canceller comprising a partitioned block frequency domain adaptive filter for filtering an input signal in dependence on a control signal, the adaptive filter comprising a plurality of parallel arranged filter partitions, each filter partition being arranged for modeling a part of an impulse response of the adaptive filter, each filter partition having update means for updating filter coefficients of that filter partition by circular convoluting a signal representative of the input signal and a signal representative of the control signal, the update means comprising constraint means for intermittently constraining the filter coefficients by eliminating circular wrap-around artifacts of the circular convolution, characterized in that the update means further comprise selection means for selecting and removing at least part of the circular wrap-around artifacts, the selection means comprising an approximation of a rectangular constraint window.

9. The acoustic echo canceller according to Claim 8, characterized in that the selection means are arranged for selecting the at least part of the circular wrap-around artifacts when the filter coefficients are not constrained by the constraint means.

10. The acoustic echo canceller according to Claim 8 or 9, characterized in that time domain values of the approximation are larger than or equal to zero.

11. The acoustic echo canceller according to any one of the Claims 8 to 10, characterized in that the approximation in time domain has substantially high slopes near the

positions which correspond to the positions of the transitions in a rectangular constraint window.

12. The acoustic echo canceller according to any one of Claims 8 to 11, characterized in that frequency domain values of the approximation each comprise a real value and complex conjugate imaginary values, whereby at least part of the imaginary values form a row of numbers, the numbers being obtainable from one another by multiplication.

13. The acoustic echo canceller according to Claim 12, characterized in that the frequency domain values of the approximation are defined as:

$$(\underline{G}^{2N})_i = \begin{cases} 2N \cdot a & \text{for } i = 0 \\ 0 & \text{for } 0 < i < 2N, i \text{ even} \\ -\frac{2N \cdot a}{2}\left(m^{-\left(\frac{i-1}{2}\right)} - m^{-\left(\frac{2N-1-i}{2}\right)}\right) j & \text{for } 0 \leq i < 2N, i \text{ odd} \end{cases}$$

with i being an index number, m being a multiplication factor, a being a mean value.

14. The acoustic echo canceller according to Claim 13, characterized in that m is substantially equal to 2.166.

15. A method of adaptively filtering an input signal in dependence on a control signal, the method comprising the steps of:

- partitioning the input signal into partitions,
- for each partition updating filter coefficients by circular convoluting a signal representative of the input signal and a signal representative of the control signal,
- for each partition intermittently constraining the filter coefficients by eliminating circular wrap-around artifacts of the circular convolution,

characterized in that the method further comprises the step of selecting and removing at least part of the circular wrap-around artifacts by means of an approximation of a rectangular constraint window.

16. The method according to Claim 15, characterized in that the selection of the at least part of the circular wrap-around artifacts is performed only when the filter coefficients are not constrained by the constraint means.

17. The method according to Claim 15 or 16, characterized in that time domain values of the approximation are larger than or equal to zero.

18. The method according to any one of the Claims 15 to 17, characterized in that the approximation in time domain has substantially high slopes near the positions which correspond to the positions of the transitions in a rectangular constraint window.

19. The method according to any one of Claims 15 to 18, characterized in that frequency domain values of the approximation each comprise a real value and/or an imaginary value and/or a conjugate imaginary value, whereby at least part of the imaginary values form a row of numbers, the numbers being obtainable from one another by multiplication.

20. The method according to Claim 19, characterized in that the frequency domain values of the approximation are defined as:

$$(\underline{G}^{2N})_i = \begin{cases} 2N \cdot a & \text{for } i = 0 \\ 0 & \text{for } 0 < i < 2N, i \text{ even} \\ -\frac{2N \cdot a}{2}\left(m^{-\left(\frac{i-1}{2}\right)} - m^{-\left(\frac{2N-1-i}{2}\right)}\right) j & \text{for } 0 \leq i < 2N, i \text{ odd} \end{cases}$$

with i being an index number, m being a multiplication factor, a being a mean value.

21. The partitioned block frequency domain adaptive filter according to Claim 20, characterized in that m is substantially equal to 2.166.